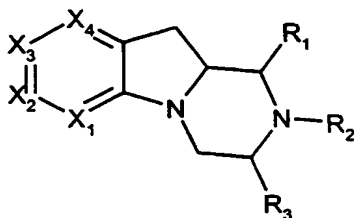


CLAIMS

1. A chemical compound of formula (I):



(I)

wherein:

R₁ to R₃ are independently selected from hydrogen and lower alkyl;

X₁ is selected from N and C-R₄;

X₂ is selected from N and C-R₅;

X₃ is selected from N and C-R₆;

X₄ is selected from N and C-R₇;

R₄, R₅ and R₇ are independently selected from hydrogen, halogen, hydroxy, alkyl, aryl, alkoxy, aryloxy, alkoyl, aryloyl, alkylthio, arylthio, alkylsulfoxyl, arylsulfoxyl, alkylsulfonyl, arylsulfonyl, amino, alkylamino, dialkylamino, nitro, cyano, carboalkoxy, carboaryloxy and carboxy; and

R₆ is selected from hydrogen, halogen, alkyl, aryl, aryloxy, alkylthio, arylthio, alkylsulfoxyl, arylsulfoxyl, alkylsulfonyl, arylsulfonyl, amino, alkylamino, dialkylamino and cyano;

with the proviso that R₄ to R₇ are not all selected as hydrogen,

and pharmaceutically acceptable salts and addition compounds and prodrugs thereof.

2. A compound according to claim 1 wherein R₁ is selected from hydrogen and methyl.

3. A compound according to claim 1 or 2 wherein R₂ is hydrogen.

4. A compound according to claim 1, 2 or 3 wherein R_3 is selected from hydrogen and methyl.
5. A compound according to any preceding claim wherein X_2 is C- R_5 .
6. A compound according to any preceding claim wherein X_3 is C- R_6 .
7. A compound according to any preceding claim wherein X_4 is C- R_7 .
8. A compound according to any preceding claim wherein X_1 is C- R_4 .
9. A compound according to any preceding claim wherein two of R_4 , R_5 , R_6 and R_7 are hydrogen.
10. A compound according to claim 9 wherein R_4 and R_6 are hydrogen.
11. A compound according to any of claims 1 to 8 wherein two of R_4 , R_5 , R_6 and R_7 are independently selected from hydrogen, chlorine, fluorine, trifluoromethyl and bromine.
12. A compound according to any of claims 1 to 8 wherein three of R_4 , R_5 , R_6 and R_7 are hydrogen.
13. A compound according to claim 12 wherein R_4 , R_6 and R_7 are hydrogen.
14. A compound according to any of claims 1 to 8 wherein R_4 is hydrogen.
15. A compound according to any of claims 1 to 8 wherein R_5 is halogen.
16. A compound according to any of claims 1 to 8 wherein R_6 is hydrogen.
17. A compound according to any of claims 1 to 8 wherein R_7 is halogen.

18. A compound according to claim 1 which is selected from:
(*RS*) 7-chloro-1,2,3,4,10,10a-hexahydropyrazino[1,2-*a*]indole,
(*RS*) 9-chloro-1,2,3,4,10,10a-hexahydropyrazino[1,2-*a*]indole,
(*RS*) 7-chloro-8-methyl-1,2,3,4,10,10a-hexahydropyrazino[1,2-*a*]indole,
5 (10a*R*) 7-chloro-1,2,3,4,10,10a-hexahydropyrazino[1,2-*a*]indole,
(*RS*) 7-bromo-1,2,3,4,10,10a-hexahydropyrazino[1,2-*a*]indole,
(3*S*, 10a*R*) 8-chloro-2-methyl-1,2,3,4,10,10a-hexahydropyrazino[1,2-*a*]indole,
(10a*R*) 8-chloro-1,2,3,4,10,10a-hexahydropyrazino[1,2-*a*]indole and
(3*S*, 10a*R*) 8-chloro-2-methyl-1,2,3,4,10,10a-hexahydropyrazino[1,2-*a*]indole.
- 10 19. A compound of formula (I) as set out in any one of claims 1 to 18 for use in therapy.
- 15 20. The use of a compound of formula (I) as set out in any of claims 1 to 18 in the manufacture of a medicament for the treatment of disorders of the central nervous system; damage to the central nervous system; cardiovascular disorders; gastrointestinal disorders; diabetes insipidus, and sleep apnea.
- 25 21. A use according to claim 20 wherein the disorders of the central nervous system are selected from depression, atypical depression, bipolar disorders, anxiety disorders, obsessive-compulsive disorders, social phobias or panic states, sleep disorders, sexual dysfunction, psychoses, schizophrenia, migraine and other conditions associated with cephalic pain or other pain, raised intracranial pressure, epilepsy, personality disorders, age-related behavioural disorders, behavioural disorders associated with dementia, organic mental disorders, mental disorders in childhood, aggressivity, age-related memory disorders, chronic fatigue syndrome, drug and alcohol addiction, obesity, bulimia, anorexia nervosa and premenstrual tension.
- 30 22. A use according to claim 20 wherein the damage to the central nervous system is by trauma, stroke, neurodegenerative diseases or toxic or infective CNS diseases.

11
12
13
14
15
16
17
18
19
20
21
22
23
24
25
26
27
28
29
30
31
32
33
34
35
36
37
38
39
40
41
42
43
44
45
46
47
48
49
50
51
52
53
54
55
56
57
58
59
60
61
62
63
64
65
66
67
68
69
70
71
72
73
74
75
76
77
78
79
80
81
82
83
84
85
86
87
88
89
90
91
92
93
94
95
96
97
98
99
100SUB
a 20

23. A use according to claim 22 wherein said toxic or infective CNS disease is encephalitis or meningitis.
24. A use according to claim 20 wherein the cardiovascular disorder is thrombosis.
25. A use according to claim 20 wherein the gastrointestinal disorder is dysfunction of gastrointestinal motility
26. A use according to claim 20 wherein said medicament is for the treatment of obesity.
27. A use according to any one of claims 20 to 26 wherein said treatment is prophylactic treatment.
28. A method of treatment of any of the disorders set out in claims 20 to 25 comprising administering to a patient in need of such treatment an effective dose of a compound of formula (I) as set out in any one of claims 1 to 18.
29. A method of treatment according to claim 28 wherein said disorder is obesity.
30. A method according to claim 28 or 29 wherein said treatment is prophylactic treatment.
31. A method of preparing a compound of formula (I) as set out in any one of claims 1 to 18.
32. A pharmaceutical composition comprising a compound of formula (I) as set out in any one of claims 1 to 18 in combination with a pharmaceutically acceptable carrier or excipient.
33. A method of making a composition according to claim 32 comprising combining a compound of formula (I) as set out in any one of claims 1 to 18 with a pharmaceutically acceptable carrier or excipient.

34. A process for the preparation of a compound of formula (I) according to any of claims 1 to 18, said process comprising the steps of :

5 (i) treating a compound of formula (IX) as described herein with an aldehyde and then exposing to acid to obtain a compound of formula (X) as described herein, and

(ii) reduction of a compound of formula (X).